

until the early morning of the 6th, when it recurved northeastward in the northern part of the Eastern Sea. The center of the typhoon traversed the Korea Strait and the southeastern part of Korea during the night of the 6th to 7th, and the Japan Sea on the 7th.

The rate of progress of the typhoon was only of 6 or 6.5 miles per hour from September 1 to 4. The positions of the center at 6 a. m. of these four days were as follows:

September 1, 6 a. m., 18° 30' latitude N., 135° 00' longitude E.
 September 2, 6 a. m., 20° latitude N., 133° 15' longitude E.
 September 3, 6 a. m., 21° 50' latitude N., 131° 40' longitude E.
 September 4, 6 a. m., 23° 35' latitude N., 130° 05' longitude E.

The center passed very close to the north of Naha in the early morning of the 6th, the barometer of that station being as low as 722 mm. (28.43 inches) at 6 a. m. of that day. The steamers *Madras Maru*, *Empress of Russia*, and *President Hayes* were much involved in this typhoon on September 6 in the Korea Strait and in the Eastern Sea.

The second typhoon of September appeared on the 3d to 5th to the NNE. of Guam, near 149° longitude E. and 19° latitude N. It moved WNW. on the 5th and northward after the 5th. It passed near to the east of the Bonins on the 8th and filled up on the 9th not far from 142° longitude E. and 30° latitude N.

The third typhoon was shown by our weather maps on the 10th to 11th between 127° and 128° longitude E., 18° and 19° latitude N. It moved westward on the 12th, and inclined very much to the north on the 13th, at the same time decreasing considerably its rate of progress. The center passed very near to the east of Basco in the morning of the 14th. From the Bashi Channel the typhoon moved NNW. toward the northern part of Formosa increasing again its rate of progress. The steamer *President Pierce* met the typhoon north of Formosa in about 121° longitude E., 26° 30' latitude N., her barometric minimum having been 742.44 mm. (29.23 inches) at 1.30 a. m., with hurricane winds from NW. by N. According to one of the officers of the steamer relative calm was observed for about 20 minutes at the time of the barometric minimum.

The typhoon began to move NE. after traversing the northern part of Formosa, and it inclined still more to the E. on the 17th. At 6 a. m. of the 18th the center was situated south of Japan, in about 133° 20' longitude E. and 31° 40' latitude N. It is impossible with the data at hand to follow the typhoon further.

TWO SEVERE TYPHOONS OVER THE NORTHERNMOST PART OF THE PHILIPPINES IN JULY, 1925

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Two well-developed typhoons have visited the Philippines during this month, with an interval between the two of only five days. The first passed over or very close to the Batanes Islands on the 8th, and the second touched the northeastern end of Luzon on the 13th. The second was much more severe than the first, but fortunately it struck only the northeastern end of Luzon in a north-westerly direction, thus averting for the northern part of Luzon a much-feared destruction. Great damage, however, was done by the two typhoons in a good number of provinces through heavy rains and floods.

The first typhoon appeared for the first time in our weather maps on July 3, the center being approximately situated then over the western Carolines near 8° latitude

N., between 142° and 143° longitude E. It moved NW. to the northeast of Yap, until the afternoon of the 4th when it began to incline westward. On the 5th the typhoon was moving W. by N., threatening the northern coast of Luzon; but it inclined again to NW. on the 6th, and even to NNW. on the 7th in the direction of Formosa. The barometric minimum observed in Basco, Batanes Islands, was 737.38 mm. (29.03 ins.) at 6.30 a. m. of the 8th. The U. S. Navy transport *Chaumont* was well under the influence of this typhoon on her trip from Guam to Manila, July 3 to 5.

The steamship *Calcutta Maru*, on her way from Kobe to Iloilo, was also within the body of this typhoon on the 6th to 8th, when near 128° longitude E. and 20° latitude N., the barometer having fallen to 747.51 mm. (29.43 ins.) on the 7th, with a gale blowing from the E., SE., and S.

The typhoon entered China on the 9th between 119° and 120° longitude E., 25° and 26° latitude N.; it recurved northeastward on the 11th to the west and north-west of Shanghai, and traversed Korea, moving ENE. in the early morning of the 12th.

The steamship *President Grant* was somewhat involved in this typhoon between Shanghai and Formosa on her last trip from Shanghai to Manila, July 10 and 11.

The approximate position of the center at 6 a. m. of July 5 to 12 was as follows:

July 5, 6 a. m., 134° 30' Longitude E., 14° 50' Latitude N.
 July 6, 6 a. m., 129° Longitude E., 16° 30' Latitude N.
 July 7, 6 a. m., 124° 35' Longitude E., 18° 30' Latitude N.
 July 8, 6 a. m., 122° 40' Longitude E., 20° 30' Latitude N.
 July 9, 6 a. m., 120° 05' Longitude E., 24° 30' Latitude N.
 July 10, 6 a. m., 119° Longitude E., 26° 40' Latitude N.
 July 11, 6 a. m., 119° Longitude E., 32° 10' Latitude N.
 July 12, 6 a. m., 127° 35' Longitude E., 37° 45' Latitude N.

The second typhoon made its appearance at 6 a. m. of the 8th, when the preceding one was still over the Philippines. Its center was situated over the western Carolines to the south of Guam about 145° longitude E. and near 10° latitude N. It moved WNW. on the 8th and 9th, but inclined westward on the 10th. The U. S. Army transport *Thomas* was well involved in this typhoon on her way from Guam to Manila; and the motor *Elmbank*, on her voyage from San Pedro to Manila, met the real center of this typhoon in 127° 25' longitude E. and 14° 54' latitude N., her barometer having fallen to 28.12 inches (714.25 millimeters) at 8 p. m. of the 11th, with terrific hurricane winds that backed very quickly from NNE. to W., S. and SSE. Relative calm was observed at 7.15 p. m. As we have only barometric observations taken every hour, the exact minimum, which must have occurred between 7 and 8 p. m., is not known.

In the afternoon of the 11th the typhoon took a north-westerly direction toward the northeastern end of Luzon when it was met by the steamship *Pathfinder* at 4.25 a. m. of the 13th with a barometric minimum as low as 28.05 inches (712.47 millimeters), 5 minutes calm having been observed, broken by an occasional gust at 3.40 a. m. The steamer was anchored at Port San Vicente (122° 09' longitude E., 18° 31' latitude N.). From northeast Luzon the typhoon moved to NNW., its center being situated, at 6 a. m. of the 14th, over the southern part of the Formosa Channel.

The approximate positions of the center at 6 a. m. for the period July 9 to 14 were as follows:

July 9, 6 a. m., 141° 50' longitude E., 11° 30' latitude N.
 July 10, 6 a. m., 135° 40' longitude E., 13° 30' latitude N.
 July 11, 6 a. m., 129° 45' longitude E., 14° 25' latitude N.
 July 12, 6 a. m., 125° 30' longitude E., 15° 45' latitude N.
 July 13, 6 a. m., 121° 50' longitude E., 18° 50' latitude N.
 July 14, 6 a. m., 118° 15' longitude E., 23° 20' latitude N.